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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/756,753

01/14/2004

Kazuya Uenishi

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7590

06/14/2005

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

SOUW, BERNARD E

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/756,753

Applicant(s)

UENISHI ET AL.

Examiner

Bernard E. Souw

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07/21/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), (JP 2003-7362), filed 01/15/2003, which papers have been placed of record in the file.

Information Disclosure Statement

2. Receipt is acknowledged of information disclosure statement (IDS) submitted on 07/21/2004. The submission is in compliance with the provisions of 37 CFR 1.97.

A signed copy of the information disclosure statement is here enclosed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furusawa et al. (USPAT 4,950,548) in view of Kobayashi et al. (USPAT 5,645,909) and Kitabatake (USPAT 6,214,107), hereinafter Kitabatake'107.

► Regarding claims 1 and 3, Furusawa et al. disclose a thin film analyzing method for analyzing a constituent of a thin film (that may be a multilayered structure, 12, 13, 14, 16), as shown in Fig.1 and recited in Col.6/ll.9-11, the method comprising a step of

cutting the thin film and analyzing the cut section of the thin film, as recited in Col.6/ll.13-17 and Col.5/ll.65-68 + Col.7/line 1.

However, Furusawa et al. do not cut the thin film (12, 13, 14,16) obliquely. Kobayashi et al. cut the thin film 41 obliquely, as shown in Fig.7 and recited in Col.3/ll.8-12 and Col.4/ll.44-47.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to cut Furusawa's thin film according to Kobayashi's oblique cutting method, in order to have a larger surface area, as suggested by Kitabatake'107 in Col.12/ll.9-15 and shown in Fig.4.

One of ordinary skill in the art would have been motivated to modify Furusawa's method of cutting thin film by Kobayashi et al., since a more detailed observation and/or analysis of a larger surface area (as shown in Kitabatake'107's Fig.4) would reveal more features that would allow more detailed observation and/or analysis.

► Regarding claims 2 and 4, Furusawa's thin film is formed on a support 11 shown in Fig.1, as recited in Col.6/ll.1-2.

► Regarding claims 5 and 6, Furusawa's analyzing method measures a distribution of states of a specific component 12, 13, 14 and/or 16 in the cut section of the thin film, as recited in Col.6/ll.13-31.

► The limitations of claims 15 and 16 are readily implicated by the combination of Kobayashi's oblique etching method with Kitabatake'107's larger surface area, as suggested by Kitabatake'107 in Col.12/ll.9-15 and shown in Fig.4.

5. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furusawa et al. in view of Kobayashi et al. and Kitabatake'107, and further in view of Bousaoula (USPAT 6,054,333) or Smentkowski et al. (USPAT 6,008,491).

Furusawa et al. as modified by Kobayashi et al. and Kitabatake'107 show all the limitations of claims 7 and 8, as previously applied to the parent claims 1, 4, 5 and 6, except the recitation of TOF-SIMS as an analyzing technique or step.

TOF-SIMS is a combination technique that is conventional and widely used for measuring the constituents of a multilayered thin film structure. This Official Notice is supported by Bousaoula in Col.4/ll.17-20, and/or by Smentkowski et al. in Col.3/ll.9-19.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a TOF-SIMS method as suggested by Bousaoula or Smentkowski et al. for analyzing the multilayer structure of Furusawa's as modified by Kobayashi et al. and Kitabatake'107, since the SIMS is known in the art as being element-sensitive, whereas the TOF is well known for its high resolution.

One of ordinary skill in the art would have been motivated to combine SIMS and TOF in order to have a superior quality of analysis of the layers' constituents.

6. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furusawa et al. in view of Kobayashi et al. and Kitabatake'107, and further in view of Nagayama et al. (USPAT 5,610,392) and Machida et al. (USPAT 5,637,445).

Furusawa et al. as modified by Kobayashi et al. and Kitabatake'107 show all the limitations of claims 9 and 10, as previously applied to the parent claims 1, 4, 5 and 6, except the recitation of μ -ESCA as an analyzing technique or step.

ESCA, or electron spectroscopy for chemical analysis, to which the μ -ESCA also belongs, is well known in the art as a conventional and widely used technique for surface analysis, as taught by Nagayama et al. in Col.1/II.29-33, whereas Machida et al. teaches that ESCA is also a method conventionally used on thin films, as recited in Col.7/II.34-37.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the ESCA technique to analyze the surface of Furusawa's & Kobayashi et al. thin films, since the method is useful for detecting local presence of materials, as taught by Nagayama et al. in Col.1/II.29-33.

One of ordinary skill in the art would have been motivated to modify Furusawa's analyzing method as modified by Kobayashi's, further by Nagayama's and/or Machida's ESCA technique, since --by using Kobayashi's oblique cutting technique-- Furusawa's layer structure is effectively exposed in a lateral direction, as shown in Kitabatake'107's Fig.4, which then can be conveniently analyzed by Nagayama's or Machida's ESCA detection technique that is capable of detecting local presence of materials.

7. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furusawa et al. in view of Kobayashi et al. and Kitabatake'107, and further in view of Power et al. (USPAT 6,614,532) and Marcus et al. (USPAT 5,842,387).

Furusawa et al. as modified by Kobayashi et al. and Kitabatake'107 show all the limitations of claims 11-14, as previously applied to the parent claims 1, 4, 5 and 6, except the recitation of a microtome with a glass cutting edge for slicing Furusawa's thin film in place of Kobayashi's etching/sputtering technique.

Power et al. use a microtome to cut thin materials into slices, as recited in Col.1/II.63-67 and Col.2/II.1-2. More specifically, Marcus et al. use a microtome made of glass to cut thin materials into slices, as recited in Col.7/II.5-11.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Furusawa's analyzing method as modified by Kobayashi's and Kitabatake'107's; further by Power et al. using microtome, since a mechanical method, such as using a microtome, is much less messy than an etching or sputtering technique, as generally known in the art.

One of ordinary skill in the art would have been motivated to make Power's microtome out of glass, as taught by Marcus et al., in order to provide an ultra-sharp cutting edge, as suggested by Marcus et al. in Col.7/II.7-9.

8. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furusawa et al. in view of Kobayashi et al. and Kitabatake'107, and further in view of Wachi et al. (USPAT 6,830,863) and Hoshi (USPAT 6,534,240).

Furusawa et al. as modified by Kobayashi et al. and Kitabatake'107 show all the limitations of claims 17-19, as previously applied to the parent claims 1, 4, 5 and 6, except the recitation of photosensitive thin film for use as an image recording layer.

Wachi et al. use a water-insoluble resin as thin film material for image recording, as recited in Col.5/ll.1-5, whereas Hoshi uses an alkali-soluble resin thin film material, as recited in Col.17/ll.32-44 and col.11/ll.38-49, wherein the wording "alkali-soluble" is expressly recited in Col.17/line 40.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a combination of Wachi's and Hoshi's image recording material in Furusawa's thin film as modified by Kobayashi et al. and Kitabatake'107, in order to have a composite photosensitive material to form high quality multicolor images, since each of the resin types is predominantly photosensitive to specific wavelength ranges, as generally known in the art.

One of ordinary skill in the art would have been motivated to have a multicolor image recording by using Wachi's and Hoshi's photosensitive material in Furusawa's thin film as modified by Kobayashi et al. and Kitabatake'107, since a multicolor image recording is highly desirable in the art for its better reproduction capability.

Specifically regarding claim 17, Wachi's as well as Hoshi's thin film material for image recording is inherently also photosensitive, as generally understood in the art.

Regarding claim 19, the limitations are inclusively encompassed in Furusawa's, as previously applied to claims 5 and 6.

Communications

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard E Souw whose telephone number is 571 272

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2482. The examiner can normally be reached on Monday thru Friday, 9:00 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on 571 272 2477. The central fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for regular communications as well as for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.

A handwritten signature in black ink, appearing to read 'Bernard E. Souw', with a long horizontal line extending to the left.

Bernard E. Souw

Patent Examiner – AU 2881

June 10, 2005